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FILE COVERS 1907 - 29 Apr 2003 VOL 138 ISS 18
FILE LAST UPDATED: 28 Apr 2003 (20030428/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d stat que
L12 (302)SEA FILE=REGISTRY (LIPOXYGEN/BI OR LIPOXYGENASE/BI)
L13 14973 SEA FILE=HCAPLUS L12 OR LIPOXYGENASE?
L65 3 SEA FILE=HCAPLUS (L12 OR L13) AND (REDUC? OR INHIBIT? OR
ACTIV?) AND BODY(W)FAT

=> d ibib abs hitrn 165 1-3

L65 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:978341 HCAPLUS
DOCUMENT NUMBER: 138:33341
TITLE: Animal **body fat** control by
reducing lipoxxygenase activity
INVENTOR(S): Pariza, Michael W.; Park, Yeonhwa
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 13 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002197301	A1	20021226	US 2001-871125	20010531
PRIORITY APPLN. INFO.:			US 2001-871125	20010531
AB A method for controlling body fat in a human or nonhuman animal includes the step of reducing lipoxxygenase activity in an animal. Lipoxxygenase activity can be reduced by reducing the enzyme activity or by lowering the enzyme level. Reduced lipoxxygenase activity correlates with reduced cell-assocd. lipoprotein lipase (LPL)				

activity and with **reduced** cellular triacylglyceride level. Mice fed feed contg. **lipoxxygenase inhibitor** nordihydroguaiaretic acid (NDGA) at a 0.1 % level had **reduced** fat and increased water and protein. A synergistic effect on **body fat** compn. was seen with a combination of NDGA and conjugated linoleic acid at 0.1 %.

IT 63551-74-6, **Lipoxxygenase**

RL: BSU (Biological study, unclassified); BIOL (Biological study)
(animal **body fat** control by **reducing**
lipoxxygenase activity)

L65 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:56455 HCAPLUS

DOCUMENT NUMBER: 136:319029

TITLE: **Lipoxxygenase inhibitors**
inhibit heparin-releasable lipoprotein lipase
activity in 3T3-L1 adipocytes and enhance
body fat reduction in mice
by conjugated linoleic acid

AUTHOR(S): Park, Yeonhwa; Pariza, Michael W.

CORPORATE SOURCE: Food Research Institute, Department of Food
Microbiology and Toxicology, University of
Wisconsin-Madison, Madison, WI, 53706, USA

SOURCE: Biochimica et Biophysica Acta (2001), 1534(1), 27-33
CODEN: BBACAQ; ISSN: 0006-3002

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The t10c12 isomer of conjugated linoleic acid (CLA) **reduces** lipid accumulation in adipocytes in part by **inhibiting** heparin-releasable lipoprotein lipase (LPL) **activity**. We now show that **inhibitors of lipoxxygenase (LOX) activity** (2-[12-hydroxydodeca-5,10-diynyl]-3,5,6-trimethyl-p-benzoquinone; 5,8,11,14-eicosatetraynoic acid; salicylhydroxamic acid; indomethacin; nordihydroguaiaretic acid (NDGA)) produce a similar **inhibitory** effect on LPL **activity** in cultured 3T3-L1 mouse adipocytes. Addnl. the LOX **inhibitors** had no effect on, or **inhibited**, lipolysis in this cell system (measured as glycerol release). Growing mice fed diet contg. 0.1% NDGA for 4 wk displayed 21% redn. in **body fat**, which was similar to 23% redn. in **body fat** produced by feeding diet contg. a suboptimal amt. of CLA (0.1%) for 4 wk. Feeding diet contg. both 0.1% NDGA and 0.1% CLA resulted in 51% redn. in **body fat** which was accompanied by significant increases in whole body water and protein. Aspirin, an **inhibitor** of cyclooxygenase 1 and 2, had no effect on LPL **activity** in 3T3-L1 adipocytes, did not affect body compn. when fed to growing mice, and failed to influence the effects of CLA on LPL **activity** in 3T3-L1 cells or body compn. in mice. These findings appear to provide new perspectives and insights into the relationships between CLA, eicosanoids, the control of lipid accumulation in adipocytes, and effects of CLA on the immune system.

IT 9029-60-1, **Lipoxxygenase**

RL: BSU (Biological study, unclassified); BIOL (Biological study)
(**lipoxxygenase inhibitors inhibit**
heparin-releasable lipoprotein lipase **activity** in 3T3-L1
adipocytes and enhance **body fat** redn. in mice by
conjugated linoleic acid)

REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L65 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2003 ACS
 ACCESSION NUMBER: 2001:669882 HCAPLUS
 DOCUMENT NUMBER: 136:64041
 TITLE: trans-10,cis-12-Conjugated Linoleic Acid
Reduces Leptin Secretion from 3T3-L1
 Adipocytes
 AUTHOR(S): Kang, Kihwa; Pariza, Michael W.
 CORPORATE SOURCE: Food Research Institute, Department of Food
 Microbiology and Toxicology, University of
 Wisconsin-Madison, Madison, WI, 53706, USA
 SOURCE: Biochemical and Biophysical Research Communications
 (2001), 287(2), 377-382
 CODEN: BBRCA9; ISSN: 0006-291X
 PUBLISHER: Academic Press
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB The trans10,cis12 (t10c12) isomer of conjugated linoleic acid (CLA) has been shown to **inhibit** heparin-releasable lipoprotein lipase **activity**, **reduce** lipid stores in cultured 3T3-L1 adipocytes, and, when fed to mice, **reduce body fat** gain. We now report that t10c12 CLA significantly **reduced** leptin secretion from cultured 3T3-L1 adipocytes, and **reduced** leptin mRNA levels within the cells. Similar effects were produced by conjugated nonadecadienoic acid (a 19-carbon CLA cognate that is more effective than CLA in **reducing body fat** gain in mice), the **lipoxxygenase inhibitor** nordihydroguaiaretic acid (which is synergistic with CLA in **reducing body fat** gain in mice), and ciglitazone (TZD, a PPAR.gamma. agonist). Feeding mice diet supplemented with 0.5% t10c12 CLA for 4 wk significantly **reduced body fat** gain, serum leptin levels and adipocyte leptin mRNA expression, without affecting feed intake or body wt. These data provide new insights into apparent mechanistic similarities among t10c12 CLA, CNA, NDGA, and TZD. (c) 2001 Academic Press.

REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d stat que

L12 (302)SEA FILE=REGISTRY (LIPOXYGEN/BI OR LIPOXYGENASE/BI)
 L13 14973 SEA FILE=HCAPLUS L12 OR LIPOXYGENASE?
 L14 (2)SEA FILE=REGISTRY NDGA/BI
 L15 2013 SEA FILE=HCAPLUS L14 OR NDGA
 L65 3 SEA FILE=HCAPLUS (L12 OR L13) AND (REDUC? OR INHIBIT? OR
 ACTIV?) AND BODY(W)FAT
 L66 2926 SEA FILE=HCAPLUS "FAT BODY"/CT
 L69 1 SEA FILE=HCAPLUS (L12 OR L13) AND (L14 OR L15) AND L66
 L70 1 SEA FILE=HCAPLUS L69 NOT L65

=> d ibib abs hitrn 170

L70 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2003 ACS
 ACCESSION NUMBER: 1997:793975 HCAPLUS
 DOCUMENT NUMBER: 128:86664
 TITLE: Evidence that free fatty acids in trophocytes of
 Periplaneta americana fat body may be regulated by the
 activity of phospholipase A2 and cyclooxygenase

AUTHOR(S): Ali, Irshad; Steele, John E.
 CORPORATE SOURCE: Department of Zoology, University of Western Ontario,
 London, ON, N6A 5B7, Can.
 SOURCE: Insect Biochemistry and Molecular Biology (1997),
 27(7), 681-692
 CODEN: IBMBES; ISSN: 0965-1748
 PUBLISHER: Elsevier Science Ltd.
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB Previous studies have shown that palmitic, stearic, oleic and linoleic acid levels in trophocytes prep'd. from the fat body of male *Periplaneta americana* are increased following treatment of the cells with hypertrehalosemic hormone (HTH). Melittin, an activator of phospholipase A2, mimicked the action of HTH by increasing the free fatty acid content in a concn.-dependent manner. The increase caused by HTH could be eliminated by pretreatment of the trophocytes with 1 mM 4'-bromophenacyl bromide (BPB), an inhibitor of phospholipase A2. BPB also decreases the concn. of free fatty acids in trophocytes not treated with HTH but by a smaller margin. Nordihydroguaiaretic acid (NDGA) and indomethacin, inhibitors of **lipoxigenase** and cyclooxygenase, resp., eliminated the increase in free fatty acids evoked by HTH. In the absence of HTH both inhibitors increased the free fatty acid content of the trophocytes, an effect consistent with the known mode of action of these agents. None of the inhibitors tested, all of which blocked HTH activated trehalose synthesis, prevented activation of phosphorylase by HTH. This is taken as evidence that other downstream sites are also important in the regulation of trehalose prodn. by the fat body. It is suggested that the increase in free fatty acids evoked by HTH, or metabolites of those fatty acids, may regulate the synthesis and release of trehalose from the trophocytes because of potential effects on trehalose phosphate synthase, trehalose 6-phosphate phosphatase, and the trehalose transport mechanism in the trophocyte membrane.

IT 9029-60-1, **Lipoxigenase**

RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)

(free fatty acids in trophocytes of cockroach fat body may be regulated by the activity of phospholipase A2 and cyclooxygenase)

=> d stat que

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L12 ( 302)SEA FILE=REGISTRY (LIPOXYGEN/BI OR LIPOXYGENASE/BI)
L13 14973 SEA FILE=HCAPLUS L12 OR LIPOXYGENASE?
L14 ( 2)SEA FILE=REGISTRY NDGA/BI
L15 2013 SEA FILE=HCAPLUS L14 OR NDGA
L65 3 SEA FILE=HCAPLUS (L12 OR L13) AND (REDUC? OR INHIBIT? OR
ACTIV?) AND BODY(W)FAT
L66 2926 SEA FILE=HCAPLUS "FAT BODY"/CT
L69 1 SEA FILE=HCAPLUS (L12 OR L13) AND (L14 OR L15) AND L66
L70 1 SEA FILE=HCAPLUS L69 NOT L65
L71 1 SEA FILE=REGISTRY "NORDIHYDROGUAIARETIC ACID"/CN
L72 2787 SEA FILE=HCAPLUS L71 OR ?NORDIHYDROGUAIARETIC(W)ACID?
L78 2 SEA FILE=HCAPLUS L72 AND L66
L79 1 SEA FILE=HCAPLUS L78 NOT (L69 OR L65 OR L70)
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=> d ibib abs hitrn 179

L79 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2003 ACS
 ACCESSION NUMBER: 1998:748972 HCAPLUS

DOCUMENT NUMBER: 130:78933
 TITLE: Evidence for the participation of arachidonic acid metabolites in trehalose efflux from the hormone activated fat body of the cockroach (*Periplaneta americana*)
 AUTHOR(S): Ali, I.; Finley, C.; Steele, J. E.
 CORPORATE SOURCE: Department of Zoology, University of Western Ontario, London, N6A 5B7, Can.
 SOURCE: Journal of Insect Physiology (1998), 44(11), 1119-1126
 CODEN: JIPHAF; ISSN: 0022-1910
 PUBLISHER: Elsevier Science Ltd.
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB The hypertrehalosemic hormones, HTH-I and HTH-II, activate trehalose synthesis and increase the rate of sugar efflux from *P. americana* fat body in vitro. These processes are unaffected by the diacylglycerol, 1-oleyl-2-acetyl-sn-glycerol, an activator of protein kinase C. Similarly, H-7 and spingosine, inhibitors of protein kinase C, are also inactive against trehalose efflux. The possibility that diacylglycerol lipase might generate an active fatty acid species was ruled out because of the failure of the inhibitor RHC-80267 to inhibit trehalose efflux. Activation of trehalose efflux from the intact fat body by HTH-I was strongly inhibited in a concn.-dependent manner by the cyclooxygenase inhibitors indomethacin and diclofenac, but not by acetylsalicylic acid. **Nordihydroguaiaretic acid**, a lipoxygenase inhibitor, also blocked HTH-I activated trehalose efflux in a concn.-dependent fashion. The phospholipase A2 inhibitors mepacrine and 4'-bromophenacyl bromide were also effective in decreasing the efflux of trehalose from HTH-I challenged fat body. The data suggest possible roles for arachidonic acid metabolites in the regulation of trehalose synthesis and in the efflux of the sugar from the fat body.

REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> fil biosis, medl, embase, jicst, wpids
 FILE 'BIOSIS' ENTERED AT 17:09:13 ON 29 APR 2003
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FILE 'MEDLINE' ENTERED AT 17:09:13 ON 29 APR 2003

FILE 'EMBASE' ENTERED AT 17:09:13 ON 29 APR 2003
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=> s 165 or 169 or 170 or 178

=> d stat que

L12 (302)SEA FILE=REGISTRY (LIPOXYGEN/BI OR LIPOXYGENASE/BI)
 L13 14973 SEA FILE=HCAPLUS L12 OR LIPOXYGENASE?
 L14 (2)SEA FILE=REGISTRY NDGA/BI
 L15 2013 SEA FILE=HCAPLUS L14 OR NDGA
 L65 3 SEA FILE=HCAPLUS (L12 OR L13) AND (REDUC? OR INHIBIT? OR
 ACTIV?) AND BODY(W)FAT
 L66 2926 SEA FILE=HCAPLUS "FAT BODY"/CT

L69 1 SEA FILE=HCAPLUS (L12 OR L13) AND (L14 OR L15) AND L66
L70 1 SEA FILE=HCAPLUS L69 NOT L65
L71 1 SEA FILE=REGISTRY "NORDIHYDROGUAIARETIC ACID"/CN
L72 2787 SEA FILE=HCAPLUS L71 OR ?NORDIHYDROGUAIARETIC(W)ACID?
L78 2 SEA FILE=HCAPLUS L72 AND L66
L80 10 SEA L65 OR L69 OR L70 OR L78

=> d bib 180 1-10

L80 ANSWER 1 OF 10 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
AN 2002:118892 BIOSIS
DN PREV200200118892
TI **Lipoxygenase inhibitors inhibit**
heparin-releasable lipoprotein lipase **activity** in 3T3-L1
adipocytes and enhance **body fat reduction** in
mice by conjugated linoleic acid.
AU Park, Yeonhwa; Pariza, Michael W. (1)
CS (1) Department of Food Microbiology and Toxicology, Food Research
Institute, University of Wisconsin - Madison, 1925 Willow Drive, Madison,
WI, 53706: mwpariza@facstaff.wisc.edu USA
SO Biochimica et Biophysica Acta, (30 November, 2001) Vol. 1534, No. 1, pp.
27-33. print.
ISSN: 0006-3002.
DT Article
LA English

L80 ANSWER 2 OF 10 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
AN 2001:499089 BIOSIS
DN PREV200100499089
TI trans-10,cis-12-conjugated linoleic acid **reduces** leptin
secretion from 3T3-L1 adipocytes.
AU Kang, Kihwa; Pariza, Michael W. (1)
CS (1) Food Research Institute, Department of Food Microbiology and
Toxicology, University of Wisconsin-Madison, 1925 Willow Drive, Madison,
WI, 53706: mwpariza@facstaff.wisc.edu USA
SO Biochemical and Biophysical Research Communications, (September 21, 2001)
Vol. 287, No. 2, pp. 377-382. print.
ISSN: 0006-291X.
DT Article
LA English
SL English

L80 ANSWER 3 OF 10 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
AN 1998:48609 BIOSIS
DN PREV199800048609
TI Evidence that free fatty acids in trophocytes of *Periplaneta americana* fat
body may be regulated by the activity of phospholipase A2 and
cyclooxygenase.
AU Ali, Irshad; Steele, John E. (1)
CS (1) Dep. Zool., Univ. Western Ontario, London, ON N6A 5B7 Canada
SO Insect Biochemistry and Molecular Biology, (July, 1997) Vol. 27, No. 7,
pp. 681-692.
ISSN: 0965-1748.
DT Article
LA English

L80 ANSWER 4 OF 10 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
AN 1993:383770 BIOSIS

DN PREV199396059070
TI The in vitro destruction of rumen fluid carotenoids by plant
lipooxygenases.
AU Larsen, T. W.; Yang, A.; Tume, R. K.
CS CSIRO, Div. Food Sci. Technol., Meat Res. Lab., P.O. Box 12, Cannon Hill,
Queensl. 4170 Australia
SO Biochemistry and Molecular Biology International, (1993) Vol. 30, No. 2,
pp. 197-207.
ISSN: 1039-9712.
DT Article
LA English

L80 ANSWER 5 OF 10 MEDLINE
AN 2002001710 MEDLINE
DN 21621415 PubMed ID: 11750884
TI **Lipooxygenase inhibitors inhibit**
heparin-releasable lipoprotein lipase activity in 3T3-L1
adipocytes and enhance **body fat reduction** in
mice by conjugated linoleic acid.
AU Park Y; Pariza M W
CS Department of Food Microbiology and Toxicology, Food Research Institute,
University of Wisconsin-Madison, 53706, USA.
SO BIOCHIMICA ET BIOPHYSICA ACTA, (2001 Nov 30) 1534 (1) 27-33.
Journal code: 0217513. ISSN: 0006-3002.
CY Netherlands
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200202
ED Entered STN: 20020102
Last Updated on STN: 20020212
Entered Medline: 20020211

L80 ANSWER 6 OF 10 MEDLINE
AN 2001506649 MEDLINE
DN 21438971 PubMed ID: 11554738
TI trans-10,cis-12-Conjugated linoleic acid **reduces** leptin
secretion from 3T3-L1 adipocytes.
AU Kang K; Pariza M W
CS Food Research Institute, Department of Food Microbiology and Toxicology,
University of Wisconsin-Madison, 1925 Willow Drive, Madison, Wisconsin
53706, USA.
SO BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS, (2001 Sep 21) 287 (2)
377-82.
Journal code: 0372516. ISSN: 0006-291X.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200110
ED Entered STN: 20010917
Last Updated on STN: 20011022
Entered Medline: 20011018

L80 ANSWER 7 OF 10 MEDLINE
AN 1998067798 MEDLINE
DN 98067798 PubMed ID: 9404012
TI Evidence that free fatty acids in trophocytes of *Periplaneta americana* fat
body may be regulated by the activity of phospholipase A2 and

cyclooxygenase.
AU Ali I; Steele J E
CS Department of Zoology, University of Western Ontario, London, Canada.
SO INSECT BIOCHEMISTRY AND MOLECULAR BIOLOGY, (1997 Jul) 27 (7) 681-92.
Journal code: 9207282. ISSN: 0965-1748.
CY ENGLAND: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199802
ED Entered STN: 19980226
Last Updated on STN: 19990129
Entered Medline: 19980217

L80 ANSWER 8 OF 10 EMBASE COPYRIGHT 2003 ELSEVIER SCI. B.V.
AN 2002010004 EMBASE
TI **Lipoxygenase inhibitors inhibit**
heparin-releasable lipoprotein lipase activity in 3T3-L1
adipocytes and enhance **body fat reduction** in
mice by conjugated linoleic acid.
AU Park Y.; Pariza M.W.
CS M.W. Pariza, Department of Food Microbiology, Food Research Institute,
University of Wisconsin, 1925 Willow Drive, Madison, WI 53706, United
States. mwpariza@facstaff.wisc.edu
SO Biochimica et Biophysica Acta - Molecular and Cell Biology of Lipids, (30
Nov 2001) 1534/1 (27-33).
Refs: 26
ISSN: 1388-1981 CODEN: BBMLFG
PUI S 1388-1981(01)00171-8
CY Netherlands
DT Journal; Article
FS 029 Clinical Biochemistry
LA English
SL English

L80 ANSWER 9 OF 10 EMBASE COPYRIGHT 2003 ELSEVIER SCI. B.V.
AN 2001347786 EMBASE
TI trans-10,cis-12-conjugated linoleic acid **reduces** leptin
secretion from 3T3-L1 adipocytes.
AU Kang K.; Pariza M.W.
CS M.W. Pariza, Food Research Institute, Department of Food Microbiology,
University of Wisconsin-Madison, 1925 Willow Drive, Madison, WI 53706,
United States. mwpariza@facstaff.wisc.edu
SO Biochemical and Biophysical Research Communications, (21 Sep 2001) 287/2
(377-382).
Refs: 22
ISSN: 0006-291X CODEN: BBRCA
CY United States
DT Journal; Article
FS 003 Endocrinology
030 Pharmacology
037 Drug Literature Index
LA English
SL English

L80 ANSWER 10 OF 10 JICST-EPlus COPYRIGHT 2003 JST
AN 940392675 JICST-EPlus
TI Effect of polyunsaturated fatty acid feeding on the **body**
fat content and lipid metabolism in rats.

AU TAKADA RYOZO; MORI TADASHI
SAITO MAMORU
CS National Inst. of Animal Industry
Kyushu National Agricultural Exp. Stn.
SO Kachiku Seikagaku (Animal Biochemistry), (1994) vol. 31, no. 1, pp. 23-27.
Journal Code: L0395A (Fig. 1, Tbl. 2, Ref. 13)
CODEN: KCSIE6; ISSN: 1340-5535
CY Japan
DT Conference; Article
LA Japanese
STA New